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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/904,103	07/11/2001	Walt Fant	CALIP005/P050	1326
22434	7590	02/23/2005	EXAMINER	
BEYER WEAVER & THOMAS LLP			CURTIS, CRAIG	
P.O. BOX 70250			ART UNIT	
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Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/904,103	<b>Applicant(s)</b> FANT ET AL.	
	<b>Examiner</b> Craig Curtis	<b>Art Unit</b> 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-6,8,10,11 and 13-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-6,8,10 and 20-26 is/are allowed.
- 6) ☐ Claim(s) 11 and 13-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Disposition of the Instant Application*

- This Office Action is responsive to Applicants' Amendment filed on 15 November 2004, which has been made of record in the file.
- By this Amendment, Applicants have canceled claims 7, 9, and 12; amended claims 1, 6, 11, and 17; and newly added claims 20-26.
- Accordingly, claims 1-6, 8, 10, 11, and 13-26 are presently pending in the instant application.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. **Claims 11, 13, 14, 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Coin et al. (US 6,590,644 B1).**

With regard to claim 11, Coin et al. disclose the invention as claimed--[a] method [i.e., by straightforward extension of the structural teachings disclosed in this reference] of providing an optical switching apparatus [see, e.g., Fig. 4], comprising: providing a plurality of optical input switches [see 60 in Fig. 4]; providing a plurality of optical output switches [see 120 in Fig.

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4]; providing a plurality of central optical switches [e.g., UUT1-UUT4] connected between the plurality of input switches and plurality of output switches [see Fig. 4]; providing a plurality of test light sources [see optical signal sources 6, i.e., Optical Source 1—Optical Source N, depicted in Fig. 4], where each test light source is connected to an optical input switch [see Fig. 4]; and providing a first plurality of optical detectors connected to the optical output switches [see optical power meters 80 and measuring instruments 170 in Fig. 4]; and providing a controller connected to each of the plurality of optical output switches, the plurality of central optical switches, the plurality of test light sources, and the plurality of optical detectors. See controller 70 in Fig. 5; also see column 10, lines 12-24.

**With regard to claim 13, Coin et al.** implicitly, if not explicitly, anticipate the additionally recited limitations of: determining if a switch of the plurality of optical input switches, the plurality of optical output switches, and the plurality of central optical switches is malfunctioning; and if an optical switch is found to be malfunctioning, indicating to a user which optical switch is malfunctioning. Each of these teachings is encompassed by the disclosure provided in column 10, lines 12-24 of **Coin et al.**

**With regard to claim 14, Coin et al.** explicitly anticipate the additionally recited limitation of providing a plurality of light signals from the plurality of test light sources [see Optical Source 1—Optical Source N in Fig. 4]; switching the plurality of light signals down optical paths of the optical switching apparatus [see optical switching functionality depicted in Fig. 4]; and determining if the light signals from the test light sources are detected by the first plurality of optical detectors [i.e., monitoring the output of power meters 80 and/or measuring instruments 170, either or both of which being implicit in light of the teachings by **Coin et al.**].

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With regard to claim 19, Coin et al. provide an explicit teaching of further providing optical paths to avoid the malfunctioning optical switch. See the plurality of optical switch paths depicted in Fig. 4 of Coin et al.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**2. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coin et al. (US 6,590,644 B1) in view of Brener (US 6,529,652 B1).**

With regard to claim 15, Coin et al. disclose the claimed invention as set forth hereinbefore **EXCEPT FOR** explicit teachings of providing a first plurality of optical fibers connected between the output connections of the input switches and the input connections of the central optical switches; providing a second plurality of optical fibers connected between the output connections of the central optical switches and the optical output switches; providing a third plurality of optical fibers connected to the input connections of the optical input switches, wherein each test light source of the plurality of test light sources is connected to an optical fiber of the third plurality of optical fibers; and providing a fourth plurality of optical fibers connected to the output connections of the optical output switches, wherein each detector of the first plurality of optical detectors is connected to an optical fiber of the fourth plurality of optical fibers.

**Brener**, however, explicitly discloses a teaching of providing a plurality of optical fibers [i.e., 20-1 to 20-j in Fig. 2] connected to the input connections of optical input switches [see the one-to-one correspondence between the plurality of optical fibers 20-1 to 20-j and input optical switches 120-1 to 120-j in Fig. 2], and a plurality of optical fibers [i.e., 25-1 to 25-j in Fig. 2] connected to the output connections of optical output switches [see the one-to-one correspondence between the plurality of optical fibers 20-1 to 20-j and output optical switches 120-1 to 120-j in Fig. 2]. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the optical switching teachings of **Coin et al.** such that a first to fourth plurality of optical fibers be provided as presently recited, relying for motivation upon the above-described teachings of **Brener**, for at least the purpose of minimizing crosstalk.

**With regard to claim 16**, the teaching by **Brener** of detectors 33 connected to (read: in communication with) optical fibers 22-1 and 22-N (please see Fig. 2 in **Brener**) is deemed to encompass the additionally recited limitation wherein said method further comprises providing a second plurality [read: two or more] of optical detectors, wherein each optical detector of the second plurality of optical detectors is connected to an optical fiber of the third plurality of optical fibers, it being submitted that it would have been obvious to one having ordinary skill in the art at the time the invention was made to have so modified the invention of **Coin et al.**, in light of the above-described teaching by **Brener**, for at least the purpose of monitoring input signal strength in an efficient and reliable manner.

**With regard to claim 17**, **Brener** discloses wherein a [second] plurality [read: two or more] of optical detectors [detectors 33 on left-hand side of Fig. 2] is used for detecting input

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signals, the input signals not being generated by the test light sources [i.e., light sources 34 taught by **Brener** are distinct from the test light sources 6 (i.e., Optical Source 1 to Optical Source N) taught by **Coin et al.**, and it is submitted that it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the invention of **Coin et al.** such that said first plurality of optical detectors be used to determine if the input signals are being correctly switched over optical paths, wherein the determining if the input signals are being correctly switched over optical paths is simultaneous with determining if the light signals from the test light sources are detected by the first plurality of optical detectors—the controller 70 taught by **Coin et al.** [see Fig. 5] being configured to accommodate such functionality—for at least the purpose of reliably gauging the integrity of said test light sources.

With regard to claim 18, **Coin et al.** provide an explicit teaching of further providing optical paths to avoid the malfunctioning optical switch. See the plurality of optical switch paths depicted in Fig. 4 of **Coin et al.**

### *Allowable Subject Matter*

3. Claims 1-6, 8, 10, and 20-26 are allowed.

### *Reasons for Allowance*

4. The following is an examiner's statement of reasons for allowance: The claims are allowable over the prior art for at least the reason that the prior art fails to teach or to reasonably suggest, regarding claims 1-5, 8, 10, and 20-22, *an optical switching apparatus wherein a controller determines if one of said plurality of central optical switches is malfunctioning by simultaneously using input signals, which are not generated by said test light sources, to test said active optical switch and said test light sources to test said protection optical switch, and*

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*regarding claims 6 and 23-26, an optical switching apparatus wherein a controller determines if one of the plurality of central optical switches is malfunctioning by testing a first plurality of optical paths using said test light sources and by simultaneously testing a second plurality of optical paths using input signals, which are not generated by said test light sources, as set forth in the claimed combination. Emphasis added.*

5. Any comments considered necessary by Applicants must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Response to Arguments***

6. Applicants' arguments filed on 15 November 2004 with respect to the claims have been fully considered but are moot in view of the new ground(s) of rejection set forth hereinbefore.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

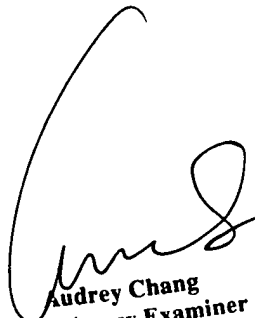
### **Contact Information**

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig Curtis, whose telephone number is (571) 272-2311. The examiner can normally be reached on Monday-Friday, 9:00 A.M. to 6:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A. Dunn, can be reached at (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*C.H.C.*  
**Craig H. Curtis**  
Group Art Unit 2872  
15 February 2005

  
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